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10/625,235	07/22/2003	Peter Malcolm Moran	9030-0001	8617

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Carol A. Schneider, Ph.D.,J.D.
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1400 Page Mill Road
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EXAMINER

HOMAYOUNMEHR, FARID

ART UNIT	PAPER NUMBER
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2139

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/625,235

Applicant(s)

MORAN ET AL.

Examiner

Farid Homayounmehr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 23, 25, 26, 29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 23, 25, 26, 29, and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: application, filed 7/22/2003; amendment filed 12/20/2007.
2. Claims 1-18, 23, 25, 26, 29, and 31 are pending in the case.

Response to Arguments

3. Applicant's amendments have created new grounds of rejection, outlined in the next section. Applicant's argument is moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-18, 23, 25, 26, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US Patent No. 5972438, dated October 26, 1999), and further in view of Ziolo (US Patent No. 4264648, dated April 28, 1981)

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5.1. As per claim 1, Suzuki is directed to a method of identifying an object having identification information, said identification information being used to verify the identity of the object (column 1 line 10-20), said method comprising:

determining at least one characteristic of a magnetic field of at least a portion of a tag, thereby obtaining a first specific magnetic signal (for example, column 7 line 43-60), wherein the tag comprises a host material having a disordered plurality of pores, said host material being at least substantially non-magnetic (column 7 line 60-65 describes a non-magnetic host material, which as shown in Fig. 17(A), includes grooves, where the magnetic material is embedded. Also col. 14, lines 38-43 shows that the coding strip is embedded in the groove, and lines 44-50 shows that the coding strip (which included the magnetic material) is disposed adjacent to the bottom of the groove), wherein at least some of the disordered plurality of pores of the host material have been filled with a magnetic material (Fig. 17(A) and associated text (including column 11 line 33-36), see also column 2 line 14-34) , and storing signal information relating to said first specific magnetic signal, said stored signal information forming the identification information of the object (column 1 line 20-31).

Suzuki teaches a host material having grooves to embed the magnetic material, but does not explicitly teach disordered pores to embed the magnetic material.

Ziolo is directed to a substrate containing disordered pores intended to embed magnetic material as shown, for example in col. 4 line 57 to col. 5 line 55. Particularly, col. 5 lines

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9-11 teaches a substrate, the surface or pores of which can be covered with magnetic material. Also, col. 5 lines 37-44 teach that the pores size is between 10 Å to 500 Å in average. Therefore, the pore sizes are different, and are averaged. This fits with description of disordered pores in Specification paragraphs [0033] and [0034], which refers to different pore sizes. Therefore, Ziolo teaches using a plurality of disordered pores to embed magnetic material. Note also that per applicant's admission in paragraph [0034] methods of fabricating and microstructuring pores were known at the time of invention.

Ziolo and Suzuki are analogous art, as they are both directed to systems which use magnetic particles. At the time of invention, it would have been obvious to the one skilled in art to use the disordered pores in the non magnetic substrate, as taught by Ziolo, as the substrate for Suzuki's magnetic cards to embed the magnetic material. The motivation to do so, would have been, as pointed out in Ziolo col. 5 lines 45-50, benefiting from the practical advantage that the magnetic material is well protected against abrasion.

5.2. As per claim 2, Suzuki is directed to the method of claim 1, wherein the step of determining at least one characteristic of said magnetic field of the at least one portion of said tag comprises a measurement of said characteristic of the site-specific magnetic field over a surface of said portion of the tag, thereby mapping a magnetic fluctuation signal (column 31 line 52 to column 32 line 5).

5.3. As per claim 3, Suzuki is directed to the method of claim 1, wherein storing signal information relating to the first specific magnetic signal comprises storing data corresponding to the at least one characteristic of said magnetic field over said portion of the tag (column 31 line 52 to column 32 line 5 shows measurement of data recorded on the card, therefore, data must have been stored before reading).

5.4. As per claim 4, Suzuki is directed to the method of claim 1, further comprising: subsequently determining the at least one characteristic of the magnetic field of said portion of the tag, thereby obtaining a second specific magnetic signal, and comparing said second specific magnetic signal with the previously stored identification information (column 31 line 52 to column 32 line 5 shows that the data read from the card was verified to determine if it was altered, therefore, the data must have been compared with a stored data) .

5.5. As per claim 5, Suzuki is directed to the method of claim 4, further comprising: magnetizing the tag prior to each determination of the at least one characteristic of the magnetic field of said portion of the tag (column 13 line 50 to 55, where the biasing is actually magnetizing the magnetic field).

5.6. As per claim 6, Suzuki is directed to the method of claim 1, further comprising: recording information on the tag by magnetizing the magnetic material present in groups

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of pores into poled domains, or patterning pores of the tag with magnetic material (column 7 line 11 to column 8 line 48).

5.7. As per claims 7 and 8, Suzuki is directed to the method of claim 1, wherein the tag is attached to the object to be identified before or after obtaining the first specific magnetic signal (Suzuki's magnetic layer (column 1 line 20 to 50) is the identifier and it can be attached to any object to identify the object in association with the magnetic layer, either before or after the identifying signal is obtained).

5.8. As per claim 9, Suzuki is directed to the method of claim 1, wherein the tag comprises a substrate supporting the host material (Fig. 1 to 3 and associated text).

5.9. As per claim 10, Suzuki is directed to the method of claim 9, wherein the substrate comprises material selected from the group consisting of metal, silicon, silica, glass, plastic, ceramic and combinations thereof (column 15 line 15 to 25 shows the binder, which is part of the substrate can be made from Silica, Silicone or other material).

5.10. As per claim 11, Suzuki is directed to the method of claim 1, wherein the host material is selected from the group consisting of alumina, zeolites, group III-V materials, polymers, silicon oxide, zinc oxide and tin oxide (column 12 line 8 to 15).

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5.11. As per claims 12 and 13, Suzuki is directed to the method of claim 1, wherein the host material comprises nanotubes cast within a second host material (per application specification, nanotubes are cast in the medium to create a barcode pattern to encode data. Suzuki Fig. 6 and associated text is directed to barcodes (item 4a) implemented in the medium).

5.12. As per claim 14, Suzuki is directed to the method of claim 1, wherein the magnetic material is selected from the group consisting of Fe, Ni, Co, their alloys, oxides, mixtures and combinations thereof (column 12 line 9-15).

5.13. As per claim 15, Suzuki is directed to the method of claim 1, Ziolo also suggests the pore size of 1 to 50 nm (col. 5 lines 37-44 teaches that the pores size is between 10 A to 500 A. Note that 1 nm is 10 A), but it does not specifically determine the diameter of the pores to be 100 nm 500 nm. However, barring any unexpected results, the diameter range of 100 nm to 500 nm would have been an obvious choice for a person skilled in art trying to implement the invention. This is also because the thickness of the coding layer of Suzuki was disclosed to be in the range of 1 micron, which is equivalent to 1000 nm (see column 26 line 3). Note that Suzuki's puts perturbations filled with magnetic particles within the coding layer, therefore, the perturbations must be much smaller than 1000 nm to fit in the coding layer.

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5.14. As per claim 16, Suzuki is directed to the method of claim 1, wherein the tag further comprises at least one coating layer (see for example column 25 line 25-30).

5.15. As per claim 17, Suzuki is directed to the method of claim 1, wherein said at least one characteristic of the magnetic field of the portion of the tag is highly dependent on the disorder of the tag (Suzuki's magnetic characteristic is defined by the recording of information on the magnetic media, as described in for example column 17 line 10 to column 18 line 37).

5.16. As per claim 18, Suzuki is directed to the method of claim 17, wherein the disorder is due to a feature selected from the group consisting of pore size, shape and orientation of pores, percentage of pore filling, crystal orientation of magnetic material in the tag, and combinations thereof (column 17 line 46 to column 31 line 52 provides 12 different examples where the disorder (alignment of magnetic particles after recording) is dependent on the type and concentration of particles, and orientation of the magnetic field, etc).

5.17. Limitations of claims 23, 25, 29 and 31 are substantially the same as claims 1-18 above.

5.18. As per claim 26, the limitation of said coating layer comprises a material which has a bulk yield stress greater than 50 MN/m^2 is a design choice for hard material (see

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applicant's specification paragraph 52). Suzuki teaches a tamper proof identification card which inherently requires a hard covering to resist tampering.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farid Homayounmehr whose telephone number is 571 272 3739. The examiner can normally be reached on 9 hrs Mon-Fri, off Monday biweekly.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Farid Homayounmehr

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Examiner

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/Kristine Kincaid/

Supervisory Patent Examiner, Art Unit 2139